

CLAIMS

1. Apparatus for characterising particles, characterised in that the apparatus includes first means for determining the electrical charge on the particles and second means for determining a second characteristic of the particles, and that the apparatus is arranged to provide an indication of the nature of the particles according to the charge and the second characteristic.
2. Apparatus according to Claim 1, characterised in that the second characteristic is size.
3. Apparatus according to Claim 1 or 2, characterised in that the second means is an optical device.
4. Apparatus according to any one of the preceding claims, characterised in that the first means includes a pathway for the particles and a plurality of electrodes spaced along the pathway arranged to provide an electrical output as the particles pass along the pathway.
5. Apparatus according to Claim 4, characterised in that the pathway is provided by an electrically insulative tube and that the electrodes are provided on an external surface of the tube.
6. Apparatus according to Claim 4 or 5, characterised in that there are five electrodes spaced along the pathway.
7. Apparatus according to Claim 6, characterised in that the outermost electrodes are grounded, that the two electrodes adjacent the outermost electrodes are connected together, and that a signal is derived from the difference between the central electrode and the two interconnected electrodes.
8. Apparatus according to any one of Claims 5 to 7, characterised in that the tube has an internal diameter of substantially 0.5mm.

9. Apparatus according to any one Claims 5 to 8, characterised in that the apparatus includes means preventing particles greater than about 10 $\mu$ m entering the tube.
10. A method of characterising particles, characterised in that the method includes the steps of measuring charge on the particles, measuring a second characteristic of the particles and providing an output indicative of the nature of the particles from the charge and the second characteristic.
11. A method according to Claim 10, characterised in that the second characteristic is size.
12. Apparatus for measuring the charge on a particle, characterised in that the apparatus includes a tube along which the particle is arranged to flow, first and second outer electrodes towards opposite ends of the tube, third and fourth electrodes adjacent the first and second electrodes respectively, a fifth electrode between the third and fourth electrodes, a connection connecting the first and second electrodes to ground, a connection connecting the third and fourth electrodes with one another and to measuring means, and a connection connecting the fifth electrode to the measuring means, and that the measuring means is arranged to subtract the signals on the third and fourth electrodes from the fifth electrode to derive a signal indicative of the charge on the particle.